

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) A communication apparatus comprising:
 - an authentication code storage section;
 - an authentication section configured to perform authentication of another communication apparatus using an authentication code of the other communication apparatus stored in said authentication code storage section and the identification data of the other communication apparatus; and
 - an authentication code updating section configured to calculate a new authentication code and update the authentication code stored in said authentication code storage section with the new authentication code when the authentication performed by said authentication section is successful.
2. (Currently Amended) The apparatus according to claim [[1]] 8, further comprising:
 - a comparator configured to compare an input authentication code with a predetermined authentication code;
 - an ending section configured to end the authentication performed by said authentication section when both codes do not coincide with each other; and
 - a starting section configured to operate said authentication section and said authentication code updating section when [[the]] both codes coincide with each other.
3. (Original) The apparatus according to claim 2, wherein said authentication section performs the authentication of the other communication apparatus using said

input authentication code when the authentication code is not stored in said authentication code storage section.

4. (Currently Amended) The apparatus according to claim 2, wherein said authentication section performs the authentication of the other communication apparatus using identification data of the other communication apparatus and the authentication code, which is the input authentication code, when said authentication code storage section does not store authentication data of the other communication apparatus.

5. (Currently Amended) The apparatus according to claim [[1]] 8, wherein said authentication section calculates authentication data based on the authentication code and the identification data of the other communication apparatus, and the authentication code and collates the calculated authentication data with authentication data of the other communication apparatus.

6. (Currently Amended) The apparatus according to claim 5, wherein said authentication section calculates the authentication data based on the authentication code, the identification data of the other communication apparatus, the authentication code and a random number.

7. (Currently Amended) The apparatus according to claim 1, wherein said authentication code updating section subjects the authentication code, stored in said authentication code storage section and used in the authentication, to a predetermined calculation, and generates a new authentication code.

8. (Currently Amended) The apparatus according to claim 7, wherein said authentication code updating section subjects the authentication code, stored in said

authentication code storage section and used in the authentication and a random number, to the predetermined calculation, and generates the new authentication code.

9. (Currently Amended) An authentication method between two communication apparatuses, comprising:

transmitting predetermined data to the apparatus to be authenticated from the apparatus demanding authentication;

calculating authentication data in the two communication apparatuses based on said predetermined data, an authentication code for calculation and of the apparatus to be authenticated, and identification data of the apparatus to be authenticated;

comparing the obtained authentication data of both the apparatuses with each other in the apparatus demanding authentication; and

updating the authentication code for calculation in the two communication apparatuses based on the predetermined data and the authentication code for calculation when the authentication data of both the apparatuses coincide with each other.

10. (Currently Amended) The method according to claim 9, wherein an authentication code is input into each apparatus to be compared with a predetermined authentication code and the authentication is ended when the input authentication code does not coincide with the predetermined authentication code.

11. (Currently Amended) The method according to claim [[9]] 10, wherein an initial value of said authentication code for calculation is an input authentication code.

12. (Currently Amended) The method according to claim [[9]] **11**, wherein said predetermined data is a random number.

13. (Currently Amended) A communication apparatus having a function for authenticating another communication apparatus, comprising:

 a comparator configured to compare an input first code or a prestored first code with a predetermined code;

 an ending section configured to end an authentication when the first code and the predetermined code do not coincide with each other;

 a transmitter configured to transmit a random number to the other communication apparatus when both of the first codes coincide with each other;

 a collation section configured to calculate authentication data based on the random number, an authentication code of the other communication apparatus, and identification data of the other communication apparatus, and to collate the calculated authentication data with authentication data transmitted from the other communication apparatus; and

 an updating section configured to update the authentication code based on the random number and the authentication code when both of the authentication data coincide with each other.

14. (Original) The apparatus according to claim 13, wherein said updated authentication code is stored in a storage section, and said collation section uses the input first code as the authentication code when the authentication code is not stored in the storage section.

15. (Currently Amended) A communication apparatus comprising:

a comparator configured to compare an input first code or a prestored first code with a predetermined code when authentication is requested by another communication apparatus;

an ending section configured to end an authentication when the first code and the predetermined code do not coincide with each other;

a receiver configured to receive a random number from the other communication apparatus;

a transmitter configured to calculate authentication data based on the random number, an authentication code of own apparatus, and identification data of own apparatus, and to transmit the calculated authentication data to the other communication apparatus; and

an updating section configured to receive a result of authentication from the other communication apparatus and update the authentication code based on the random number and the authentication code when the authentication is successful.

16. (Original) The apparatus according to claim 15, wherein said updated authentication code is stored in a storage section, and said transmission section uses the first code as the authentication code when the authentication code is not stored in the storage section.

17. (Currently Amended) An article of manufacture comprising a computer usable medium having a computer readable program code embodied therein, the computer readable program comprising:

a first computer readable program code for causing a computer to allow two communication apparatuses to authenticate each other using an authentication code; and

a second computer readable program code for causing a computer to calculate a new authentication code, and update the authentication code, when the authentication is successful,

wherein the first program code causes a computer (a) to calculate authentication data based on an authentication code shared by the two communication apparatuses, identification data of one of the two communication apparatuses, and predetermined code generated by said one of the two communication apparatuses and transmitted to the other of the two communication apparatuses, and (b) to collate the authentication data of the two communication apparatuses.

18. (Cancelled).
19. (Currently Amended) A communication apparatus comprising:
an input section configured to input a first authentication code;
a memory which stores second authentication codes of other communication apparatuses corresponding to the first authentication code;
~~an output section configured to output a second authentication code corresponding to the first authentication code input by the input section;~~
an authentication section configured to perform authentication for setting a communication link with an external apparatus using the second authentication code of the external apparatus and corresponding to the first authentication code

inputted by the input section and read from the memory output from the output section; and

an updating section configured to update the second authentication code of the external apparatus and corresponding to the first authentication code inputted by the input section and stored in the memory, to a code different from the second authentication code output from said output section when the authentication by the authentication section is successful.

20. (Currently Amended) An authentication method of a communication apparatus comprising a memory which stores second authentication codes of other communication apparatuses corresponding to a first authentication code, the method comprising:

inputting [[a]] the first authentication code;
outputting a reading the second authentication code of an external apparatus and corresponding to the input first authentication code;
performing authentication for setting a communication link with an external apparatus using the output read second authentication code; and
updating the second authentication code of the external apparatus and corresponding to the first authentication code inputted by an input section and stored in memory, to a code different from the output second authentication code when the authentication is successful.